

Sequence Listing PCT JP0302946.txt
SEQUENCE LISTING

DT09 Rec'd PCT/PTO 13 SEP 2004

<110> GOTO, Hidetsugu
NAKANO, Shigeru

<120> Structural gene responsible for acetic acid resistance in acetic acid bacteria, acetic acid bacteria transformed with said gene, and acetic acid fermentation using said transformations

<130> 4439-4024

<140> tba

<141> 2004-09-10

<150> PCT/JP03/02946

<151> 2003-03-12

<160> 10

<170> PatentIn version 3.2

<210> 1

<211> 2016

<212> DNA

<213> Gluconacetobacter entanii

<400> 1

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20 25 30

Pro Ile Ser Ser Thr Val Gly Leu Ile Glu Gly Arg Glu Thr Leu Leu
35 40 45

Phe Gly Thr Asn Asn Tyr Leu Gly Leu Ser Gln Ser Pro Ala Ala Ile
50 55 60

Glu Ala Ala Val Glu Ala Ala Arg Ala Tyr Gly Val Gly Thr Thr Gly
65 70 75 80

Ser Arg Ile Ala Asn Gly Thr Gln Gly Leu His Arg Gln Leu Glu Glu
85 90 95

Arg Leu Cys Thr Phe Phe Arg Arg Arg His Cys Met Val Phe Ser Thr
100 105 110

Gly Tyr Gln Ala Asn Leu Gly Thr Ile Ser Ala Leu Ala Gly Lys Asp
115 120 125

Asp Tyr Leu Leu Leu Asp Ala Asp Ser His Ala Ser Ile Tyr Asp Gly
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130

135

140

Ser Arg Leu Gly His Ala Gln Val Ile Arg Phe Arg His Asn Asp Ala
 145 150 155 160

Asp Asp Leu His Lys Arg Leu Arg Arg Leu Asp Gly Thr Pro Gly Ala
 165 170 175

Lys Leu Val Val Val Glu Gly Ile Tyr Ser Met Met Gly Asp Val Val
 180 185 190

Pro Met Ala Glu Phe Ala Ala Val Lys Arg Glu Thr Gly Ala Trp Leu
 195 200 205

Leu Ala Asp Glu Ala His Ser Val Gly Val Met Gly Glu His Gly Arg
 210 215 220

Gly Val Ala Glu Ser Asp Gly Val Glu Asp Asp Val Asp Phe Val Val
 225 230 235 240

Gly Thr Phe Ser Lys Ser Leu Gly Thr Val Gly Gly Tyr Cys Val Ser
 245 250 255

Asn His Ala Gly Leu Asp Leu Ile Arg Leu Cys Ser Arg Pro Tyr Met
 260 265 270

Phe Thr Ala Ser Leu Pro Pro Glu Val Ile Ala Ala Thr Met Ala Ala
 275 280 285

Leu Thr Glu Leu Glu Asn Arg Pro Glu Leu Arg Val Arg Leu Met Asp
 290 295 300

Asn Ala Arg Arg Leu His Asp Gly Leu Gln Ala Ala Gly Leu Arg Thr
 305 310 315 320

Gly Pro Gln Ala Ser Pro Val Val Ser Val Ile Leu Asp Asp Val Ala
 325 330 335

Val Ala Val Ala Phe Trp Asn Arg Leu Leu Asp Leu Gly Val Tyr Val
 340 345 350

Asn Leu Ser Leu Pro Pro Ala Thr Pro Asp Gln His Pro Leu Leu Arg
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Glu Ile Phe Ala Val Val Ala Gly Glu Met Gly Ile Asn Arg Ala Ala
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Sequence Listing PCT JP0302946.txt

<211> 1360

<212> DNA

<213> Acetobacter aceti

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cattcaagca gccacgagg ctgccgcggc atgtggcgta ggcacaacgg gctcacgcat      360
tgcaaattggc acacaatccc tgcaccgaca gcttgaaaaa gatattgccg cgtttttttg      420
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cgcaacccca gttattgccg ttacattgga aacagctgaa gaagctattc ccatgtggaa     1140
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gcggccggtg ctccgttggt ccgtaatggc caccatacag cccgaacaaa ttgcgcaggc     1260
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20 25 30

Lys Pro Val Ser Ser Thr Val Gly Ile Ile Glu Gly Arg Glu Thr Leu

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35

40

45

Leu Phe Gly Thr Asn Asn Tyr Leu Gly Leu Ser Gln Ser Lys Asn Ala
 50 55 60

Ile Gln Ala Ala Gln Gln Ala Ala Ala Ala Cys Gly Val Gly Thr Thr
 65 70 75 80

Gly Ser Arg Ile Ala Asn Gly Thr Gln Ser Leu His Arg Gln Leu Glu
 85 90 95

Lys Asp Ile Ala Ala Phe Phe Gly Arg Arg Asp Ala Met Val Phe Ser
 100 105 110

Thr Gly Tyr Gln Ala Asn Leu Gly Ile Ile Ser Thr Leu Ala Gly Lys
 115 120 125

Asp Asp His Leu Phe Leu Asp Ala Asp Ser His Ala Ser Ile Tyr Asp
 130 135 140

Gly Ser Arg Leu Ser Ala Ala Glu Val Ile Arg Phe Arg His Asn Asp
 145 150 155 160

Pro Asp Asn Leu Tyr Lys Arg Leu Lys Arg Met Asp Gly Thr Pro Gly
 165 170 175

Ala Lys Leu Ile Val Val Glu Gly Ile Tyr Ser Met Thr Gly Asn Val
 180 185 190

Ala Pro Ile Ala Glu Phe Val Ala Val Lys Lys Glu Thr Gly Ala Tyr
 195 200 205

Leu Leu Val Asp Glu Ala His Ser Phe Gly Val Leu Gly Gln Asn Gly
 210 215 220

Arg Gly Ala Ala Glu Ala Asp Gly Val Glu Ala Asp Val Asp Phe Val
 225 230 235 240

Val Gly Thr Phe Ser Lys Ser Leu Gly Thr Val Gly Gly Tyr Cys Val
 245 250 255

Ser Asp His Pro Glu Leu Glu Phe Val Arg Leu Asn Cys Arg Pro Tyr
 260 265 270

Met Phe Thr Ala Ser Leu Pro Pro Glu Val Ile Ala Ala Thr Thr Ala
 275 280 285

Ala Leu Lys Asp Met Gln Ala His Pro Glu Leu Arg Lys Gln Leu Met
 290 295 300

Ala Asn Ala Gln Gln Leu His Ala Gly Phe Val Asp Ile Gly Leu Asn
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305 310 315 320

Ala Ser Lys His Ala Thr Pro Val Ile Ala Val Thr Leu Glu Thr Ala
325 330 335

Glu Glu Ala Ile Pro Met Trp Asn Arg Leu Leu Glu Leu Gly Val Tyr
340 345 350

Val Asn Leu Ser Leu Pro Pro Ala Thr Pro Asp Ser Arg Pro Leu Leu
355 360 365

Arg Cys Ser Val Met Ala Thr His Thr Pro Glu Gln Ile Ala Gln Ala
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Ile Ala Ile Phe Arg Gln Ala Ala Ala Glu Val Gly Val Thr Ile Thr
385 390 395 400

Pro Ser Ala Ala

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Sequence Listing PCT JP0302946.txt

<400> 9
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